

## CLAIMS

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is as follows:

- 1        1. A method to assist decision-making, and to closely monitor various  
2        performance measures of an enterprise by extending supply chain management  
3        using financial management considerations, said method comprising the steps  
4        of:
  - 5                selecting at least one activity or solution related to supply chain  
6                management for consideration;
  - 7                determining whether the selected at least one activity or solution is  
8                affected by financial management information, and if so, then integrating the  
9                affecting financial management information with information related to the  
10                selected at least one activity or solution;
  - 11                developing a process to generate a strategic or operational business  
12                plan that provides a solution for the selected at least one activity or solution  
13                related to supply chain management;
  - 14                determining whether the process is affected by financial management  
15                objectives, and if so, then integrating the affecting financial management  
16                objectives with objectives related to the process;
  - 17                determining whether the process is affected by risk management  
18                objectives, and if so, then integrating the affecting risk management objectives  
19                with objectives related to the process;
  - 20                determining whether the process will benefit from utilizing financial  
21                management techniques, and if so, then employing financial management  
22                techniques benefitting the process; and
  - 23                performing the process using information, objectives, risk management

24 objectives, and techniques associated with the at least one selected activity or  
 25 solution including information, objectives, risk management objectives  
 26 integrated in the determining steps, and using financial management  
 27 techniques identified as beneficial to the process.

1 2. A method as recited in claim 1, wherein the at least one selected activity or  
 2 solution is selected from the group of  
 3 demand planning comprising: forecasting and targeted marketing;  
 4 production planning comprising: category management, materials  
 5 planning, procurement and capacity planning;  
 6 transportation planning comprising: carrier management, load planning  
 7 and import/export regulations compliance;  
 8 inventory management,  
 9 transportation scheduling comprising: route planning, vehicle  
 10 scheduling and in-transit goods management;  
 11 distribution, finished goods inventory planning,  
 12 distributed resources planning, and  
 13 deployment planning.

1 3. A method as recited in claim 1, wherein the financial management  
 2 objectives are selected from the group of reducing risk, reducing funding  
 3 costs, maximizing the value of the firm, increasing liquidity, reducing foreign  
 4 exchange risk, or reducing cost of capital and improving financial asset  
 5 utilization.

1 4. A method as recited in claim 1, wherein the risk management objectives  
 2 are related to risks that affect the enterprise including insurable risks, market  
 3 risks, business risks, interest rate risks, uninsurable catastrophe risks, weather

4 risks, political risks, liquidity risks, credit risks and counterparty risks.

1 5. A method as recited in claim 1, wherein the financial management  
2 techniques are selected from the group of value at risk techniques, option  
3 valuation analytics, and portfolio management techniques.

1 6. A method to assist decision-making, and to closely monitor various  
2 performance measures of an enterprise by extending financial management  
3 using supply chain management considerations, said method comprising the  
4 steps of:

5 selecting at least one activity or solution related to financial  
6 management for consideration;

7 developing a process to generate a strategic or operational business  
8 plan that provides a solution for the selected at least one activity or solution  
9 related to financial management;

10 determining whether the process is affected by supply chain  
11 management information, and if so, then integrating the affecting supply chain  
12 management information with information related to the process;

13 determining whether the process is affected by supply chain  
14 management objectives, and if so, then integrating the affecting supply chain  
15 management objectives with objectives related to the process;

16 determining whether the process is affected by risk management  
17 objectives, and if so, then integrating the affecting risk management objectives  
18 with objectives related to the process;

19 determining whether the process will benefit from utilizing supply  
20 chain management techniques, and if so, then employing supply chain  
21 management techniques benefitting the process; and

22 performing the process using information, objectives, risk management

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23 objectives, and techniques associated with the at least one selected activity or  
24 solution including information, objectives, risk management objectives  
25 integrated in the determining steps, and using supply chain management  
26 techniques identified as beneficial to the process.

1 7. A method as recited in claim 6, wherein the at least one selected activity or  
2 solution is selected from the group of  
3 foreign exchange risk management comprising: management of  
4 economic exposures, transactional exposures, and accounting exposures;  
5 working capital management comprising: short-term financing, trade  
6 financing, current asset management, inter-company financial management,  
7 and cash management;  
8 investment analysis comprising: analysis of portfolio investments,  
9 foreign direct investments, and capital budgeting;  
10 capital structure strategy and implementation;  
11 risk management;  
12 tax management;  
13 foreign investment analysis comprising: analysis of portfolio  
14 investments, and foreign direct investments;  
15 foreign operations financing;  
16 international financing;  
17 special financing vehicles; and  
18 global financing strategy.

1 8. A method as recited in claim 6, wherein the supply chain management  
2 objectives are selected from the group of improving cycle time, increasing  
3 customer service, reducing logistics costs, reducing inventory, improving  
4 demand forecasts, and improving asset utilization.

1        9. A method as recited in claim 6, wherein the risk management objectives are  
2        related to risks that affect the enterprise including insurable risks, market  
3        risks, business risks, interest rate risks, uninsurable catastrophe risks, weather  
4        risks, political risks, liquidity risks, credit risks and counterparty risks.

1        10. A method as recited in claim 6, wherein the supply chain management  
2        techniques are selected from the group linear programming, mixed integer  
3        programming, optimization and scheduling techniques.

1        11. A method to assist decision-making, and to closely monitor various  
2        performance measures of an enterprise by both extending supply chain  
3        management using financial management considerations and extending  
4        financial management using supply chain management considerations, said  
5        method comprising the steps of:  
6                selecting at least one activity or solution related to supply chain  
7        management for consideration;  
8                selecting at least one activity or solution related to financial  
9        management for consideration;  
10               developing a process to generate a strategic or operational business  
11        plan that provides a solution both for the selected at least one activity or  
12        solution related to supply chain management and for the at least one activity or  
13        solution related to financial management;  
14               determining whether the selected at least one activity or solution  
15        relating to supply chain management is affected by financial management  
16        information, and determining whether the selected at least one activity or  
17        solution relating to financial management is affected by supply chain  
18        management information, and if so, then integrating the affecting information

19 with information related to both information related to the selected at least one  
 20 activity or solution related to supply chain management and information  
 21 related to the selected at least one activity or solution related to financial  
 22 management;  
 23 determining whether the process is affected by financial management  
 24 objectives, and determining whether the process is affected by supply chain  
 25 management objectives, and if so, then integrating the affecting objectives  
 26 with objectives related to the process;  
 27 determining whether the process is affected by risk management  
 28 objectives, and if so, then integrating the affecting risk management objectives  
 29 with risk management objectives related to the process;  
 30 determining whether the process will benefit from utilizing supply  
 31 chain management techniques, and if so, then employing supply chain  
 32 management techniques benefitting the process;  
 33 determining whether the process will benefit from utilizing financial  
 34 management techniques, and if so, then employing financial management  
 35 techniques benefitting the process; and  
 36 performing the process using information, objectives, risk management  
 37 objectives, and techniques associated with the at least one selected activity or  
 38 solution relating to supply chain management and financial management,  
 39 including information, objectives, risk management objectives integrated in  
 40 the determining steps, and using supply chain management techniques and  
 41 financial management techniques identified as beneficial to the process.

1 12. A method as recited in claim 11, wherein the at least one selected activity  
 2 or solution related to supply chain management is selected from the group of  
 3 demand planning comprising: forecasting and targeted marketing;  
 4 production planning comprising: category management, materials

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5 planning, procurement and capacity planning;  
6 transportation planning comprising: carrier management, load planning  
7 and import/export regulations compliance;  
8 inventory management,  
9 transportation scheduling comprising: route planning, vehicle  
10 scheduling and in-transit goods management;  
11 distribution, finished goods inventory planning,  
12 distributed resources planning, and  
13 deployment planning.

1 13. A method as recited in claim 11, wherein the financial management  
2 objectives are selected from the group of reducing risk, reducing funding  
3 costs, maximizing the value of the firm, increasing liquidity, reducing foreign  
4 exchange risk, or reducing cost of capital and improving financial asset  
5 utilization.

1 14. A method as recited in claim 11, wherein the risk management objectives  
2 are related to risks that affect the enterprise including insurable risks, market  
3 risks, business risks, interest rate risks, uninsurable catastrophe risks, weather  
4 risks, political risks, liquidity risks, credit risk, and counterparty risks.

1 15. A method as recited in claim 11, wherein the financial management  
2 techniques are selected from the group of value at risk techniques, option  
3 valuation analytics, and portfolio management techniques.

1 16. A method as recited in claim 11, wherein the at least one selected activity  
2 or solution related to financial management is selected from the group of  
3 foreign exchange risk management comprising: management of

4 economic exposures, transactional exposures, and accounting exposures;  
 5 working capital management comprising: short-term financing, trade  
 6 financing, current asset management, inter-company financial management,  
 7 and cash management;  
 8 investment analysis comprising: analysis of portfolio investments,  
 9 foreign direct investments, and capital budgeting;  
 10 capital structure strategy and implementation;  
 11 risk management;  
 12 tax management;  
 13 foreign investment analysis comprising: analysis of portfolio  
 14 investments, and foreign direct investments;  
 15 foreign operations financing;  
 16 international financing;  
 17 special financing vehicles; and  
 18 global financing strategy.

1 17. A method as recited in claim 11, wherein the supply chain management  
 2 objectives are selected from the group of improving cycle time, increasing  
 3 customer service, reducing logistics costs, reducing inventory, improving  
 4 demand forecasts, and improving asset utilization.

1 18. A method as recited in claim 11, wherein the supply chain management  
 2 techniques are selected from the group linear programming, mixed integer  
 3 programming, optimization and scheduling techniques.

1 19. A method to assist decision-making, and to closely monitor various  
 2 performance measures of an enterprise by extending supply chain management  
 3 using financial management considerations, said method comprising the step



- 4 of generating a strategic or operational business plan using information and  
5 models derived from at least one of the following steps:
- 6 a. designing a supply chain model for a firm utilizing firm-specific  
7 information including strategic objectives, a desired level of risk, market  
8 position of the firm and industry competitive landscape;
- 9 b. determining which customer demands to fulfill, and when to fulfill  
10 them, while factoring in demand uncertainty, capacity and time constraints;
- 11 c. developing inventory policies to service stochastic customer  
12 demand, using information related to service targets, budgets, stock out  
13 probabilities and costs and demand fulfillment rates;
- 14 d. mitigating foreign exchange risk by considering the firm's global  
15 foreign exchange position using vendor selection, thereby reducing foreign  
16 exchange exposures; and
- 17 e. dynamically shifting production in coordination with procurement  
18 planning to locations with weak currencies, thereby reducing production costs.

1 20. A method to assist decision-making, and to closely monitor various  
2 performance measures of an enterprise by extending supply chain management  
3 using financial management considerations, said method comprising the steps  
4 of:

- 5 designing a supply chain model for a firm utilizing firm-specific  
6 information including strategic objectives, a desired level of risk, market  
7 position of the firm and industry competitive landscape;
- 8 performing at least one optimization technique selected from the group  
9 of:
- 10 a. optimizing ownership structure and transfer pricing methodologies  
11 for an existing profit maximizing supply chain model;
- 12 b. optimizing supply chain design for an existing ownership structure

13 by seeking to maximize profit or value of the firm within the context of  
14 international taxation and foreign exchange risk; and  
15 c. optimizing supply chain design simultaneously with ownership  
16 structure, with the objective of maximizing profit or the value of the firm;

1 21. A method as recited in claim 20, wherein the step of optimizing supply  
2 chain design for an existing ownership structure considers the foreign  
3 exchange risk by trading-off the firm's profitability and benefits of reducing  
4 risk by creating a supply chain that is naturally hedged using a constrained  
5 mathematical model with this trade-off modeled in objective function, thereby  
6 creating an efficient frontier showing optimal expected profits for a chosen  
7 level of risk.

1 22. A method as recited in claim 20, wherein the step of performing at least  
2 one optimization technique is accomplished by using a network design  
3 problem methodology.

1 23. A method as recited in claim 20, wherein the step of designing a supply  
2 chain model further comprises the step of performing Monte Carlo simulation  
3 to test robustness of proposed supply chain designs.

1 24. A method as recited in claim 23, wherein the Monte Carlo simulation  
2 provides an analysis of impacts of varying foreign exchange rate scenarios.

1 25. A method as recite in claim 23, wherein the Monte Carlo simulation  
2 provides and analysis of impacts of foreign exchange movements on  
3 profitability of a selected supply chain design, wherein a customer demand is  
4 correlated with foreign exchange rates.

1       26. A method to assist decision-making, and to closely monitor various  
2       performance measures of an enterprise by extending supply chain management  
3       using financial management considerations, said method comprising the steps  
4       of:  
5             designing a supply chain model for a firm utilizing firm-specific  
6       information including strategic objectives, a desired level of risk, market  
7       position of the firm and industry competitive landscape; and  
8             estimating a loss in profitability associated with designing a supply  
9       chain to reduce risk; and  
10            implementing the supply chain model designed in the designing step if  
11       a cost of obtaining a similar position using traditional financial risk  
12       management techniques is more than the cost using the supply chain model  
13       designed in the designing step.

1       27. A method to assist decision-making, and to closely monitor various  
2       performance measures of an enterprise by extending supply chain management  
3       using financial management considerations, said method comprising the steps  
4       of:  
5             designing a supply chain model for a firm utilizing firm-specific  
6       information including strategic objectives, a desired level of risk, market  
7       position of the firm and industry competitive landscape; and  
8             identifying optimal supply chain designs to maximize profitability or  
9       firm value at a selected risk level, with respect to at least one source of risk.

1       28. A method as recited in claim 27, wherein the at least one source of risk is  
2       selected from the group of political risk, catastrophe risk, business risk,  
3       geographical risk and local market risks.